

WHAT IS CLAIMED:

1. A method for servicing communications from a Call Control Entity (CCE) to a wireless terminal, comprising:

5 communicatively coupling the CCE with a wireless local area network (WLAN);

 receiving at the CCE a call for the wireless terminal;

 determining if the wireless terminal is serviced by the WLAN;

10 delivering the call to the wireless terminal via the WLAN if the wireless terminal is serviced by the WLAN; and

 attempting to deliver the call to the wireless terminal via a cellular network if the wireless terminal is not serviced by the WLAN.

15 2. The method of claim 1, further comprising delivering the call to voice mail if the call cannot be delivered to the wireless terminal.

20 3. The method of claim 1, further comprising:

 determining a location of the wireless terminal relative to a coverage area of the WLAN;

 determining the location of the wireless terminal relative to a coverage area of the cellular network;

25 servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

 servicing the call with the cellular network when the location of the wireless terminal is outside the coverage area of the WLAN but within the coverage area of the cellular network.

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4. The method of claim 3, further comprising determining the location of the wireless terminal with Global Positioning Satellites (GPS).

5. The method of claim 4, further comprising:

determining a relative motion and location of the wireless terminal relative to a boundary of a coverage area of the WLAN;

determining a relative motion and location of the wireless terminal relative to a coverage area of the cellular network;

servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

servicing the call with the cellular network when:

the relative motion of the wireless terminal is towards the boundary of the coverage area of the WLAN; or

the location of the wireless terminal is within the coverage area of the cellular network and the wireless terminal is predicted to leave the coverage area of the WLAN.

6. The method of claim 3, further comprising initiating a handoff of the call from the WLAN to the cellular network before a loss of signal with the WLAN is expected to occur, based on the relative motion of the wireless terminal towards a boundary of a coverage area of the WLAN.

7. The method of claim 3, further comprising predicting if the wireless terminal will leave a coverage area of the WLAN based on previous movements of the wireless terminal relative to the coverage area of the WLAN.

8. The method of claim 7, further comprising servicing the

call with the WLAN when the wireless terminal is predicted to stay within the coverage area of the WLAN.

5 9. The method of claim 1, further comprising delivering the call to the wireless terminal via the WLAN or the cellular network based on comparing the signal quality of the WLAN and the signal quality of the cellular network.

10 10. The method of claim 1, further comprising comparing signal strengths from a plurality of Access Points (APs) in the WLAN to determine whether to service the wireless terminal with the WLAN or the cellular network.

15 11. The method of claim 3, further comprising observing the signal strengths over time from a plurality of APs to predict whether the wireless terminal is leaving a coverage area of the WLAN.

12. The method of claim 3, further comprising:

20 comparing relative signal quality of the cellular network and the WLAN; and

choosing to service the call based on relative service quality between the parallel communication path and the WLAN.

25 13. The method of claim 3, further comprising:

servicing the call to the wireless terminal via the cellular network when the signal quality of a serving Access Point (AP) fails to meet the first handoff threshold and when signal strengths of all Access Points (APs) in the WLAN are decreasing.
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14. A method for servicing communications to a wireless terminal with a wireless local area network (WLAN) and an alternative network, comprising:

5 servicing a call to the wireless terminal via the WLAN;
 determining if a signal quality between the WLAN and the wireless terminal fails to meet a first handoff threshold;
 establishing a parallel communication path to the wireless terminal via the alternative network to service the call; and
10 servicing the call to the wireless terminal via the alternative network when the signal quality fails to meet a second handoff threshold;
 terminating the communication path between the wireless terminal and the WLAN when the signal quality between the WLAN
15 and the wireless terminal decreases below the second handoff threshold;
 servicing the call to the wireless terminal via the WLAN when the signal quality increases above the first handoff threshold; and
20 terminating the communication path between the wireless terminal and the alternative network when the signal quality between the WLAN and the wireless terminal increases above the first handoff threshold.

25 15. The method of claim 14, further comprising:

 determining a location of the wireless terminal relative to a coverage area of the WLAN;
 determining the location of the wireless terminal relative to a coverage area of the alternative network;
30 servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

servicing the call with the alternative network when the location of the wireless terminal is outside the coverage area of the WLAN but within the coverage area of the alternative network.

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16. The method of claim 14, wherein the alternative network comprises a cellular network.

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17. The method of claim 14, wherein the alternative network comprises a satellite based network.

18. The method of claim 14, further comprising:

determining a relative motion and location of the wireless terminal relative to a boundary of a coverage area of the WLAN;

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determining a relative motion and location of the wireless terminal relative to a coverage area of the alternative network;

servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

servicing the call with the alternative network when:

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the relative motion of the wireless terminal is towards the boundary of the coverage area of the WLAN; or

the location of the wireless terminal is within the coverage area of the alternative network and predicted to leave the coverage area of the WLAN.

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19. The method of claim 14, further comprising initiating a handoff of the call from the WLAN to the alternative network before a loss of signal within the WLAN based on the relative motion of the wireless terminal relative to a boundary of a coverage area of the WLAN.

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20. The method of claim 14, further comprising predicting if the wireless terminal will leave a boundary of a coverage area of the WLAN based on previous movement of the wireless terminal relative to the boundary of a coverage area of the WLAN.

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21. The method of claim 20, further comprising servicing the call with the WLAN when the wireless terminal is predicted to stay within a coverage area of the WLAN.

10 22. The method of claim 14, further comprising determining whether to handoff/deliver call to wireless terminal via WLAN or the alternative network based on comparing the signal quality of the WLAN and the signal quality of the alternative network.

15 23. The method of claim 14, further comprising comparing signal strengths from a plurality of Access Points (APs) in the WLAN to determine whether to service the wireless terminal with the WLAN or the alternative network.

20 24. The method of claim 14, further comprising observing the signal strengths over time from a plurality of APs to predict whether the wireless terminal is leaving a coverage area of the WLAN.

25 25. The method of claim 14, further comprising:
comparing relative signal quality of the parallel communication path and the WLAN; and
choosing to service the call based on relative service quality between the parallel communication path and the WLAN.

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26. The method of claim 14, further comprising:

servicing the call to the wireless terminal via the alternative network when the signal quality of a serving Access Point (AP) fails to meet the first handoff threshold and when a signal strength of all Access Points (APs) in the WLAN are decreasing.

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27. A method for servicing a wireless terminal via a wireless local area network (WLAN) comprising:

servicing a call with the wireless terminal via a cellular network;

determining that a service quality supportable by the WLAN meets a first handoff threshold;

establishing a parallel communication path to the wireless terminal via the WLAN; and

when the service quality supported by the WLAN meets a second handoff threshold, terminating the communication path to the wireless terminal via the cellular network; and

when the service quality supported by the WLAN subsequently fails to meet the first handoff threshold, terminating the communication path to the wireless terminal via the WLAN.

28. The method of claim 27, further comprising:

determining a location of the wireless terminal relative to a coverage area of the WLAN;

determining the location of the wireless terminal relative to a coverage area of the alternative network;

servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

servicing the call with the alternative network when the location of the wireless terminal is outside a coverage area of the WLAN but within the coverage area of the alternative network.

29. The method of claim 27, wherein the alternative network comprises a cellular network.

30. The method of claim 27, wherein the alternative network comprises a satellite based network.

31. The method of claim 27, further comprising:

5 determining a relative motion and location of the wireless terminal relative to a boundary of a coverage area of the WLAN;

 determining a relative motion and location of the wireless terminal relative to a coverage area of the alternative network;

10 servicing the call with the WLAN when the location of the wireless terminal is within the coverage area of the WLAN; and

15 servicing the call with the alternative network when the relative motion of the wireless terminal is towards the boundary of the coverage area of the WLAN and location of the wireless terminal is within the coverage area of the alternative network and predicted to leave the coverage area of the WLAN.

32. The method of claim 27, further comprising initiating a handoff of the call from the WLAN to the alternative network before a loss of signal within the WLAN based on the relative motion of the wireless terminal relative to a boundary of a coverage area of the WLAN.

25 33. The method of claim 27, further comprising predicting if the wireless terminal will leave a boundary of a coverage area of the WLAN based on previous movement of the wireless terminal relative to the boundary of a coverage area of the WLAN.

30 34. The method of claim 33, further comprising servicing the call with the WLAN when the wireless terminal is predicted to stay within a coverage area of the WLAN.

35. The method of claim 28, further comprising determining whether to handoff/deliver call to wireless terminal via WLAN or the alternative network based on comparing the signal quality of the WLAN and the signal quality of the alternative network.

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36. The method of claim 27, further comprising comparing signal strengths from a plurality of Access Points (APs) in the WLAN to determine whether service the wireless terminal with the WLAN or the alternative network.

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37. The method of claim 27, further comprising observing the signal strengths over time from a plurality of APs to predict whether the wireless terminal is leaving a coverage area of the WLAN.

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38. The method of claim 27, further comprising:

comparing relative signal quality of the parallel communication path and the WLAN; and

choosing to service the call based on relative service quality between the parallel communication path and the WLAN.

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39. The method of claim 27, further comprising:

servicing the call to the wireless terminal via the alternative network when the signal quality of a serving Access Point (AP) fails to meet the first handoff threshold and when a signal strength of all Access Points (APs) in the WLAN are decreasing.

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